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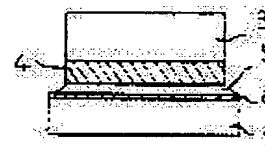
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(54) CONDUCTOR MATERIAL

(57)Abstract:

PURPOSE: To relax thermal stresses in joining ceramic to metal by making a composite body with glass or glass ceramic containing essential constituents of oxide of copper, Al_2O_3 and SiO_2 and with a conductor.

CONSTITUTION: A mixture of 15W40% of glass powder of mean particle diameter of $1\mu\text{m}$ selected to constitute a total amount of 100% with 55W65% of SiO_2 , 10W20% of Al_2O_3 and 15W25% of Cu_2O as a fundamental composition and of 85W60% of Cu powder of mean particle diameter of $0.5\mu\text{m}$ is sintered in N_2 at $700\text{W}1000^\circ\text{C}$ to make a plate. When joining Cu to Al_2O_3 or SiC , the plate is used as a thermal stress relaxation member in a structure sandwiching the plate between the metal and ceramic. Since the plate of sintered body can be made to have a coefficient of thermal expansion of $35\text{W}120 \times 10^{-7}/^\circ\text{C}$, the plate is useful as a thermal stress relaxation member between electronic components and structural materials to improve the reliability of the electronic components and structural materials.



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